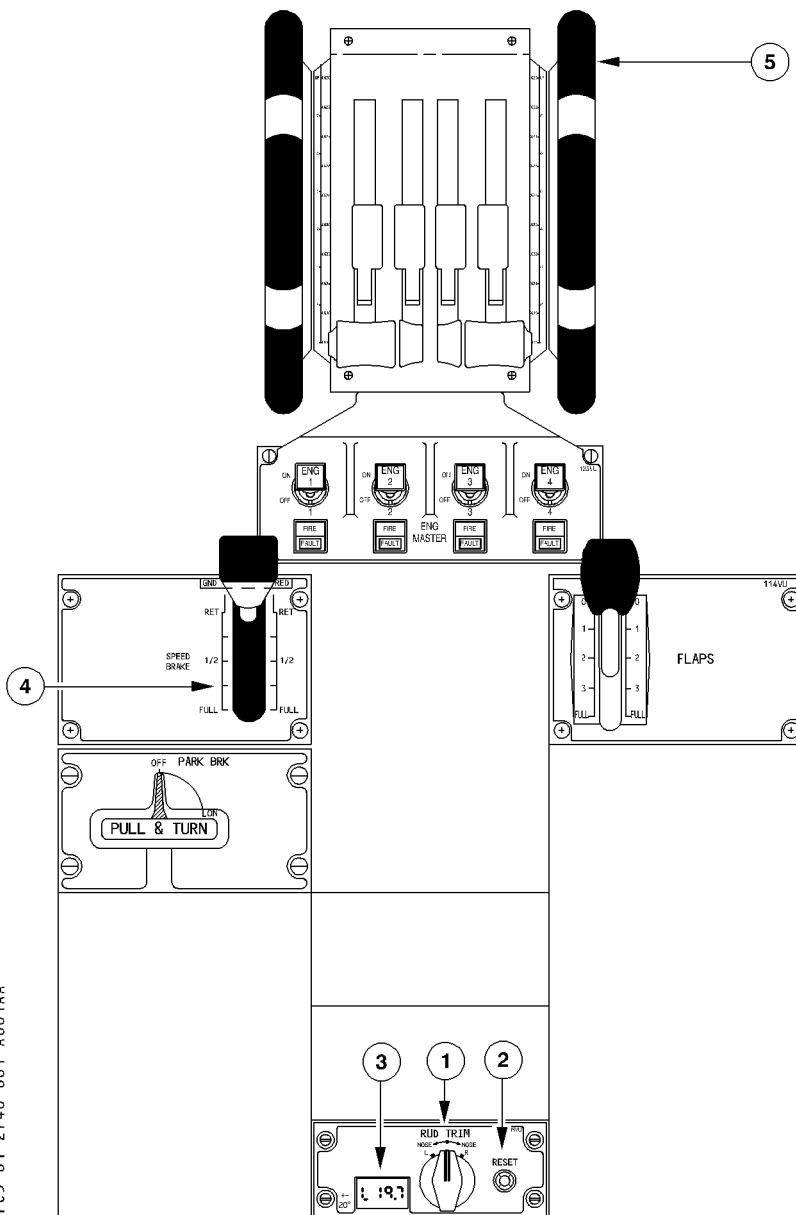


PEDESTAL



FFCS-01-2740-001-A001A

	FLIGHT CONTROLS CONTROLS AND INDICATORS	1.27.40	P 2
		SEQ 001	REV 08

① RUD TRIM sel

Controls the rudder trim actuator which moves the neutral point of the artificial feel by the equivalent of :

in clean configuration	:	1° / seconds of rudder travel
slats/flaps extended	:	1° / seconds of rudder travel for quick inputs
		3° / seconds for inputs longer than 1.5 seconds

② RESET pb

By pushing the RESET pb the zero trim position is ordered at 3° / seconds.

Note : Rudder trim rotary sw and RESET pb are not active with autopilot engaged.

③ Position Indicator

Displays rudder trim direction (L or R) and value (O to 25°).

④ SPEEDBRAKE lever

The lever controls:

- The position of the speedbrake surfaces

To select speedbrake surfaces to a required position the lever has to be pushed down and selected to the required position. A «hard point» is provided at « $1/2$ » SPEED BRAKE position.

- Manual preselection of the ground spoilers

To arm the ground spoilers the lever must be pulled up when in RET position.

When the lever is armed, (or reverse thrust is selected) all spoilers surfaces will automatically extend at landing or in case of rejected takeoff.

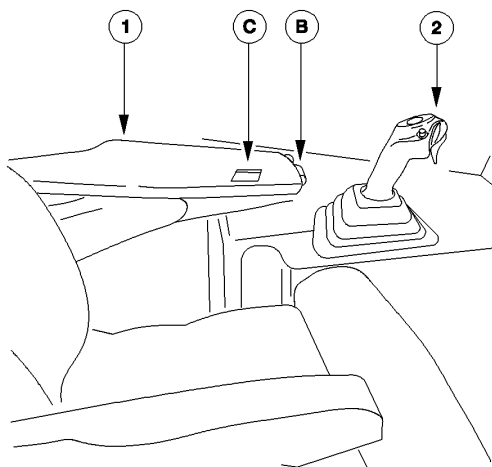
⑤ PITCH TRIM wheel

Both pitch trim wheels provide mechanical control of the THS and have priority over electrical control.

Note : Crew action on pitch trim wheel does not disconnect the PRIMs (Micro switches actuated by the override mechanism ensure that the computers remain synchronized with the manually selected position).

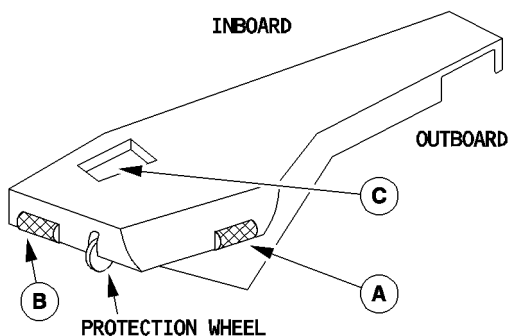
Trim position is indicated in degrees on a scale adjacent to each trim wheel. The THS mechanical control must be used when pitch direct law is in use. A CG scale is also provided to give prior to takeoff the relation between CG location and pitch trim setting. Normal range for takeoff is marked by a green band (from -7° to -1°). Following nose wheel touch down, pitch trim is automatically reset to 5° up as the pitch attitude becomes less than 2.5° for more than 5 seconds.

LATERAL CONSOLES



FFCS-01-2740-003-A001AA

① ARM REST



FFCS-01-2740-003-B001AA

Arm rest is linked to the seat by means of a supporting arm.

The arm rest position is adjustable.

Following setting and indications are provided:

Ⓐ Height adjustment

Ⓑ Pitch adjustment

Ⓒ Armrest memory position display in pitch and in height.

	FLIGHT CONTROLS CONTROLS AND INDICATORS	1.27.40 P 4	
		SEQ 300	REV 11

② SIDESTICKS

Sidesticks, one on each lateral console, are used for manual pitch and roll control.

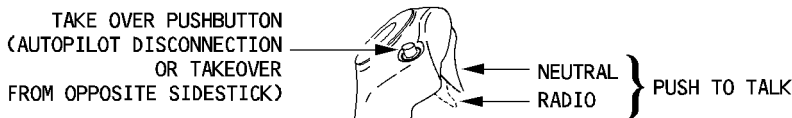
They are springloaded to neutral.

When the autopilot is engaged a solenoid operated detent locks both sidesticks in the neutral position.

If the pilot applies a force above a given threshold (5daN in pitch, 3.5 daN in roll) the autopilot disengages and the stick becomes unlocked and the deflection is sent as command to the computers.

The hand grip includes 2 pushbuttons :

- Autopilot disconnect/sidestick priority pushbutton
- Push to talk button



Sidestick priority logic

- When only one pilot operates the sidestick his demand is sent to the computers.
- When the other pilot operates his sidestick in the same or opposite direction both pilots inputs are algebraically added. The addition is limited to single stick maximum deflection.

Note : *In the event of simultaneous input on both sidesticks (2° deflection of the neutral position in any direction) the two green SIDE STICK PRIORITY lights on the glareshield come on and "DUAL INPUT" voice message is activated.*

A pilot can deactivate the other stick and take full control by pressing and keeping pressed his takeover pushbutton.

For latching the priority condition, it is recommended to press the takeover push button for more than 40 seconds. The takeover push button can then be released without losing priority.

However at any time, a deactivated stick can be reactivated by momentarily pressing either takeover pushbutton on either stick.

If both pilots press their takeover pushbuttons, the last pilot to press will get the priority.

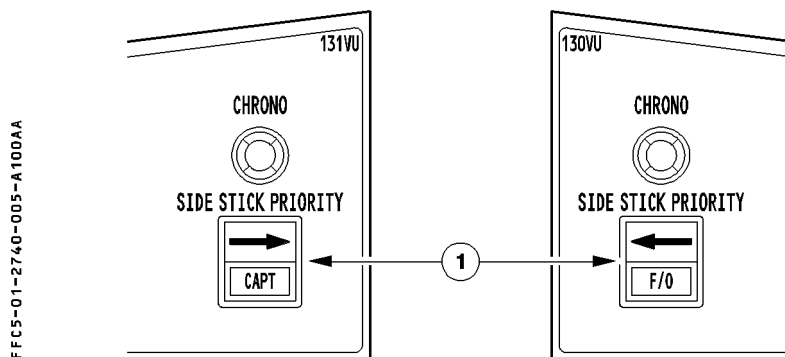
Note : *If an autopilot is engaged, the first action on a take over pushbutton will disengage it.*

In a priority situation

- A red light will come on in front of the pilot whose stick is deactivated
- A green light will come on in front of the pilot who has taken control, if the other stick is not in the neutral position (to indicate a potential and unwanted control demand).

Note : *If, on ground at takeoff thrust application, one stick is deactivated, the takeoff «CONFIG» warning is triggered.*

GLARESHIELD



①SIDE STICK PRIORITY It

Arrow red It

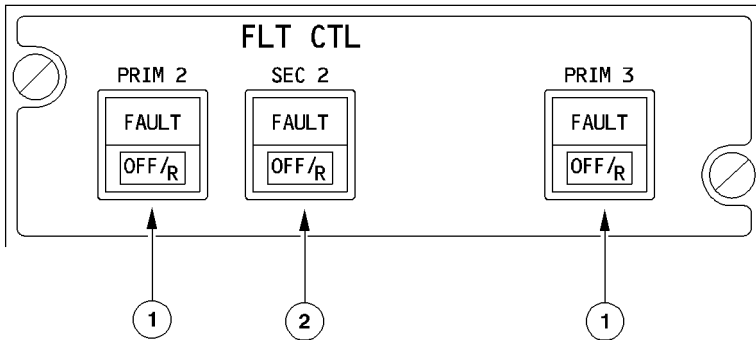
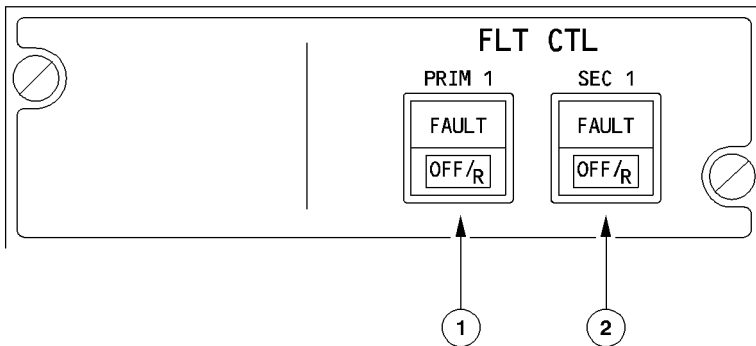
- : – Illuminates in front of the pilot losing authority.
- Extinguishes if he has recovered his authority, ie:
 - If the other take-over pushbutton is released prior priority condition is latched, or
 - If he has used his take-over pushbutton to cancel a latched priority situation.

Sidestick priority audio: a «PRIORITY LEFT» or «PRIORITY RIGHT» audio voice message is given each time priority is taken.

CAPT-F/O green It

- : – Illuminates in front of the pilot who has taken priority by pressing the takeover push button if the opposite stick is not at neutral.
- or
- CAPT and F/O light illuminate in case of simultaneous input on both sidesticks.
- Extinguishes when the opposite stick is returned to the neutral position.

OVERHEAD PANEL



FFCS-01-2740-006-A100AA

	FLIGHT CONTROLS CONTROLS AND INDICATORS	1.27.40	P 7
		SEQ 100	REV 15

①PRIM pbs

Control the Flight Control Primary Computers (FCPC).

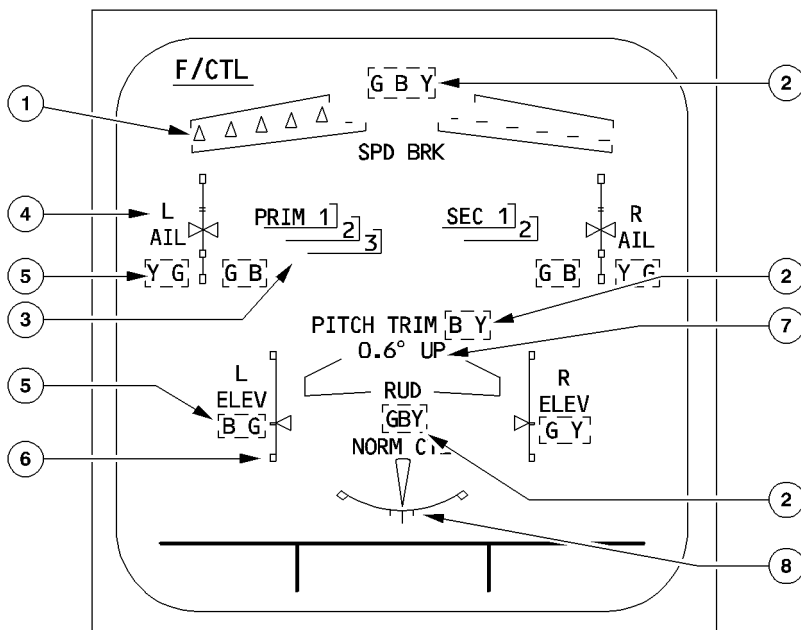
- | | | |
|----------|---|--|
| ON | : | The following functions are provided by each computer : <ul style="list-style-type: none"> – Normal pitch – Normal lateral – MLA – Speedbrakes, ground spoilers control logic – Pitch alternate – Pitch direct – Roll direct – Yaw alternate – Rudder travel – Ailerons droop – Abnormal attitude law – Autopilot laws' computation – Characteristic speeds computation |
| OFF | : | The corresponding computer is not active. To reset, switch it OFF, then on. |
| FAULT It | : | The amber FAULT light and associated ECAM caution come on, when a failure is detected.
The FAULT light goes out, when OFF selected, or at the end of the PRIM power up test, provided it is satisfactory. |

②SEC pbs

Control the Flight Control Secondary Computers (FCSC).

- | | | |
|----------|---|---|
| ON | : | The following functions are provided by each computer : <ul style="list-style-type: none"> – Pitch direct – Roll direct – Yaw alternate – Rudder trim – Rudder travel |
| OFF | : | The corresponding computer is not active. To reset, switch it OFF, then on. |
| FAULT It | : | The amber FAULT light and associated ECAM caution come on, when a failure is detected.
The FAULT light goes out, when OFF selected.
It flashes at the end of a SEC power up test (at electrical power application). |

FC5-01-2740-009-A100AA



△	:	Spoiler not retracted (green)
—	:	Spoiler retracted (green)
△	:	Spoiler fault deflected (amber)
1	:	Spoiler fault retracted (amber and underlined)

It is normally in green. It becomes amber in case of hydraulic system low pressure (downstream the leak valves).

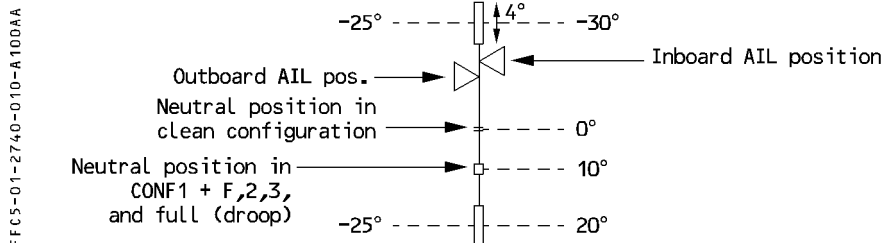
- PRIM and SEC labels are always displayed in white.
- The computer number is normally in green and boxed in grey. The number and box become amber, in the event of a computer failure.

	FLIGHT CONTROLS CONTROLS AND INDICATORS		1.27.40	P 10
			SEQ 100	REV 15

④Ailerons position indication

White scale and green indexes.

The index becomes amber when both (associated) servojacks are not available



⑤Aileron / Elevator actuators indication

G, B and Y are normally displayed in green.

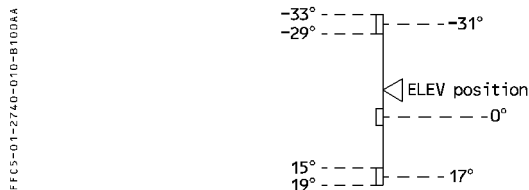
They become amber in case of a hydraulic system low pressure.

There are partially boxed in amber, when electrical failure is detected by the PRIM.

⑥Elevator position indication

White scale and green index.

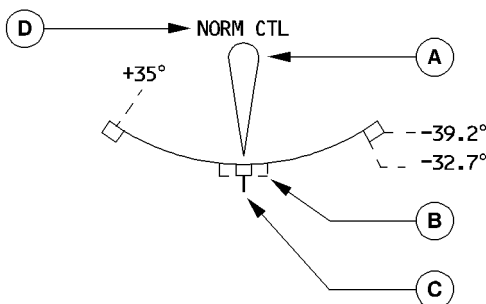
The index becomes amber, when both associated actuators are not available.



⑦Pitch trim position indication

PITCH TRIM label	:	It is normally in white. It becomes amber in case of THS electrical control loss.
Position indication	:	Varies from 2° down to 15° up. It is normally in green. It becomes amber in case of a B + Y system low pressure.

⑧ Yaw control indications



① Rudder position indication

It is normally in green.

The rudder symbol becomes amber, in the case of a B + G + Y hydraulic low pressure.

② Rudder travel limiter or PTLU indication

It is normally in green.

It becomes amber when travel Limiter 1 and 2 are faulty.

③ Rudder trim position

It is normally in blue.

The position varies from -29.2° to $+29.2^\circ$.

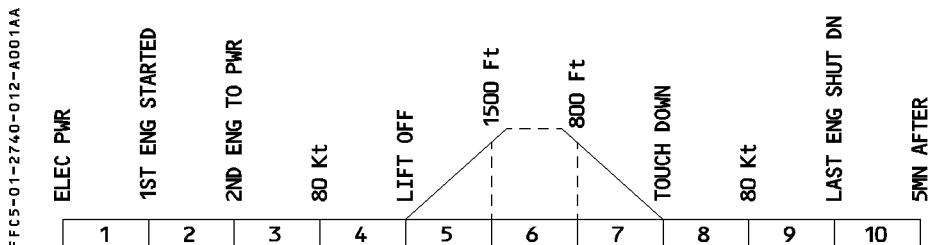
It becomes amber, if the rudder trim systems 1 and 2 are inoperative.

④ NORM CTL message

It appears in amber when the normal rudder command is lost.

The rudder is then controlled by the Backup Control Module.

WARNINGS AND CAUTIONS



E / WD: FAILURE TITLE conditions	AURAL WARNING	MASTER LIGHT	SD PAGE CALLED	LOCAL WARNING	FLT PHASE INHIB	
CONFIG . SPD BRK NOT RETRACTED or . PITCH TRIM NOT IN TO RANGE (− 7°, −1°) . RUD TRIM NOT IN TO RANGE (± 3°) aircraft not in TO configuration when thrust levers are set at TO or Flex TO or when pressing TO CONFIG. pb	CRC	MASTER WARN	F/CTL	NIL	5, 6, 7, 8	
CONFIG R (L) SIDESTICK FAULT (BY TAKE OVER) L or R sidestick is inoperative (deactivated by takeover pb) when thrust levers are set at TO or Flex TO or when pressing TO CONFIG. pb			NIL	Red * SIDESTICK PRIORIRY It	4, 5, 6, 7, 8	
L + R ELEV FAULT loss of both elevators				PFD message	NIL	
L (R) SIDESTICK FAULT transducers on pitch or roll axis are failed on one sidestick	SINGLE CHIME	MASTER CAUT	F/CTL	NIL		
PRIM 1 (2)(3) FAULT failure of 1 primary computer			F/CTL	FAULT It on PRIM pb	3, 4, 5, 7, 8	
SEC 1 (2) FAULT failure of one secondary computer			F/CTL	FAULT It on SEC pb	3, 4, 5	
FCDC 1 + 2 FAULT failure of both FCDC			F/CTL	NIL	4, 5, 7	
DIRECT LAW direct law is active			F/CTL	PFD message	4, 5, 7, 8	
ALTN LAW alternate law is active			F/CTL	NIL		
IR DISAGREE disagree between two IR, the third one failed			NIL	PFD message	NIL	3, 4, 5, 7
ADR DISAGREE disagree between two ADRs, the third one being failed or rejected by the PRIMs						

* The red SIDESTICK PRIORITY It is illuminated as soon as the sidestick is inoperative.

E / WD: FAILURE TITLE conditions	AURAL WARNING	MASTER LIGHT	SD PAGE CALLED	LOCAL WARNING	FLT PHASE INHIB
TRIM SETTING DISAGREE Actual trim setting is different from trim setting computed by FWC, according to the ECAM CG (+/- 2°). Only activated by pressing the TO CONFIG pushbutton.	SINGLE CHIME	MASTER CAUT	NIL	NIL	5, 6, 7, 8
GND SPLR FAULT Loss of ground spoiler function in all PRIM computers			F/CTL	NIL	3, 4, 5
SPD BRK DISAGREE Position disagree between surfaces and handle position.					4, 5
SPD BRK FAULT Spd brake lever transducers to all PRIM failed.					3, 4, 5, 7
STAB CTL FAULT Loss of the electrical control of the stabilizer.					4, 5, 7, 8
L (R) ELEV FAULT Loss of both servojacks on one elevator.					1, 4, 10
L (R) OUTR (INR) AIL FAULT Loss of both servojacks on one aileron.					4, 5
SPLR FAULT Loss of one or more spoilers.					4, 5, 7, 8
RUD TRIM FAULT Rudder trim 1 + 2 fault.					8, 10
RUDDER FAULT					3, 4, 5, 7, 8
RUD NORM CTL FAULT					3, 4, 5
RUD PEDAL FAULT					3, 4, 5, 7, 8
YAW DAMPER FAULT Yaw damper 1 + 2 fault					8
ELEV REDUND LOST Loss of elevator redundancy for which a subsequent failure would lead to a degraded pitch control, or pitch mechanical backup.					3, 4, 5, 7, 8, 10
PEDAL SENSOR FAULT					3, 4, 5, 7, 8
ELEV SERVO FAULT Loss of one servojack on one elevator.					3, 4, 5, 7, 8
AIL SERVO FAULT Loss of one servojack on one aileron.					3, 4, 5, 7, 8
RUD B (Y) (G) SERV FAULT					3, 4, 5, 7, 8
FCDC 1 (2) FAULT					3, 4, 5, 7, 8
YAW DAMPER 1 (2)					3, 4, 5, 7, 8
RUD TRIM 1 (2) FAULT					3, 4, 5, 7, 8
RUD B (G) (Y) SERVO JAM	NIL	NIL	NIL	NIL	3, 4, 5, 6, 7, 8
SEC 1(2) PITCH FAULT					3, 4, 5, 6, 7, 8
PRIM 1(2)(3) PITCH FAULT					3, 4, 5, 6, 7, 8
TURB DAMP FAULT Loss of longitudinal or lateral turbulence damping due to accelerometer failure.					3, 4, 5, 6, 7, 8
SENSOR FAULT					3, 4, 5, 6, 7, 8

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			SEQ 101	REV 16

E / WD: FAILURE TITLE conditions	AURAL WARNING	MASTER LIGHT	SD PAGE CALLED	LOCAL WARNING	FLT PHASE INHIB
GYRO FAULT At least 2 gyrometers lost.	SINGLE CHIME	MASTER CAUT	NIL	NIL	3, 4, 5, 7, 8
ACCLRM FAULT At least 2 Nz accelerometers lost.					
RUD PRIM 1 FAULT	NIL	NIL			3 to 8
RUD SEC 1 FAULT					

MEMO

- The SPEED BRK message is displayed in green, when speedbrakes are extended.
It becomes amber in phases 2, 3, 4, 5, or in flight when one engine N1 is above idle for more than 50 seconds.
- The GND SPLRS ARMED message is displayed in green, when the ground spoilers are armed.